

Remarks

Claims 1-23 remain in the application. Claims 17 and 23 are hereby amended. No new matter is being added.

Claim Rejections -- 35 U.S.C. 103

Claims 1 and 7 were rejected under 35 U.S.C. 103 as being unpatentable over Siev et al in view of Chung et al. Applicants respectfully traverse this rejection in relation to the claims as hereby amended.

Amended claim 1 recites as follows.

1. A method of **load balancing between a plurality of routers by automated resetting of gateways**, the method comprising:
 - receiving a packet at a first router from a source host to be forwarded to a destination host;
 - applying an algorithm at the first router to select a second router to be a next gateway for the source host for packets destined to the destination host; and**
 - sending an ICMP redirect message from the first router to the source host to reset a default gateway of the source host to be the second router for packets destined to the destination host.**

(Emphasis added.)

As shown above, the claimed invention pertains to a technique **for load balancing between a plurality of routers by automated resetting of gateways**. As further recited above, **an algorithm is applied at a first router to select a second router to be a next gateway for the source host for packets destined to the destination host**. In addition, the claim specifies that **an ICMP redirect message is sent from the first router to the source host to reset a default gateway of the source host to be the second router for packets destined to the destination host**.

As stated in the latest office action, Siev et al did not disclose the method of sending an ICMP redirect message from the first router to the source router to reset a default gateway of the source host to be the second router for packets destined to the destination host. Applicant agrees with this statement.

The latest office action asserts that Chung et al teaches the method of sending an ICMP redirect message from the router to the source host to reset the gateway of the source host for packets destined to the destination host. Column 8, lines 16-30 and FIG. 4 of Chung et al is cited in regards to this assertion. The motivation for using the method taught by Chung et al in the network of Siev et al is asserted as being that "it provides a way to bypass the dispatcher 64 and go directly to the end point." Applicant respectfully traverses this assertion in regards to the teachings of Chung et al.

Applicant respectfully submits that, upon closer examination, the citation to Chung et al teaches that the cited ICMP message is undesirable and needs to be suppressed. Specifically, as stated on column 8, lines 27-33, "However, this effect is **undesirable** in the routing technique of FIG. 4 because the dispatcher 64 performs the server selection process as previously described. It therefore may be necessary to **suppress** the ICMP host redirect message for the ghost IP address by, for example, removing or altering the corresponding operating system code in the dispatcher." (Emphasis added.)

Applicant respectfully submits that, per the above citation, Chung et al teaches that ICMP redirect messages are to be suppressed. Therefore, applicant respectfully submits that the combination of Siev et al and Chung et al does not teach the invention of claim 1, and that claim 1 is patentably distinguished over the cited art.

Similarly, applicant respectfully submits that the combination of Siev et al and Chung et al does not teach the invention of claim 7, and that claim 7 is patentably distinguished over the cited art.

Claims 2, 4, 5, 8, and 10-12 were rejected under 35 U.S.C. 103 as being unpatentable over Siev et al in view of Chung et al in further view of Inoue et al.

Applicants respectfully traverse this rejection in relation to the claims as hereby amended.

Inoue et al is cited in relation to a pseudo-random algorithm and does not disclose or suggest the above-discussed deficiencies of Siev et al and Chung et al.

Claims 2, 4, and 5 depend from claim 1. Hence, applicant respectfully submits that claims 2, 4, and 5 are now also patentable over the cited art for at least the same reasons discussed above in relation to claim 1.

Claims 8, 10-12 and 16 depend from claim 7. Hence, applicant respectfully submits that claims 8, 10-12 and 16 are now also patentable over the cited art for at least the same reasons discussed above in relation to claim 7.

Claims 3, 6, 9, 13, and 15 were rejected under 35 U.S.C. 103 as being unpatentable over Siev et al in view of Chung et al in further view of Datta et al. Applicants respectfully traverse this rejection in relation to the claims as hereby amended.

Datta et al is cited in relation to a round robin type selection process and does not disclose or suggest the above-discussed deficiencies of Siev et al and Chung et al.

Claims 3 and 6 depend from claim 1. Hence, applicant respectfully submits that claims 3 and 6 are now also patentable over the cited art for at least the same reasons discussed above in relation to claim 1.

Claims 9, 13 and 15 depend from claim 7. Hence, applicant respectfully submits that claims 9, 13 and 15 are now also patentable over the cited art for at least the same reasons discussed above in relation to claim 7.

Claim 14 was rejected under 35 U.S.C. 103 as being unpatentable over Siev et al in view of Chung et al in further view of Datta et al and Lamberton et al.

Applicants respectfully traverse this rejection in relation to the claim as hereby amended.

Lamberton et al is cited in relation to a weighted has algorithm and does not disclose or suggest the above-discussed deficiencies of Siev et al and Chung et al. Datta et al also does not disclose or suggest the above-discussed deficiencies of Siev et al and Chung et al.

Claim 14 depends from claim 7. Hence, applicant respectfully submits that claim 14 is now also patentable over the cited art for at least the same reasons discussed above in relation to claim 7.

Claim 16 was rejected under 35 U.S.C. 103 as being unpatentable over Siev et al in view of Chung et al in further view of Datta et al and Inoue et al. Applicants respectfully traverse this rejection in relation to the claim as hereby amended.

Inoue et al is cited in relation to a pseudo-random algorithm and does not disclose or suggest the above-discussed deficiencies of Siev et al and Chung et al. Datta et al also does not disclose or suggest the above-discussed deficiencies of Siev et al and Chung et al.

Claim 16 depends from claim 7. Hence, applicant respectfully submits that claim 16 is now also patentable over the cited art for at least the same reasons discussed above in relation to claim 7.

Claims 17-19 and 23 were rejected under 35 U.S.C. 103 as being unpatentable over Siev et al in view of Inoue et al. Applicants respectfully traverse this rejection in relation to the claims as hereby amended.

Amended claim 17 recites as follows.

17. A method of load balancing between a plurality of routers by automated selection of a router to respond to an ARP request, the method comprising:

receiving an address resolution protocol (ARP) request at the plurality of routers from a requesting host from a source IP address in relation to a destination IP address;

performing the automated selection of the router to respond to the ARP request by applying an algorithm at each router to determine which single router is to respond to the ARP request; and
 sending an ARP reply from the responding router to the requesting host.

(Emphasis added.)

As shown above, the claimed invention now expressly recites in the second element (outside the preamble) “performing the automated selection of the router to respond to the ARP request **by applying an algorithm at each router to determine which single router is to respond to the ARP request**”.

In Siev et al, “**One of the servers is elected as a leader (the Master), which acts as a load balancer for the group**, while the remaining servers act as slaves.” (Paragraph [0008], emphasis added.) Furthermore, Siev et al teaches that “the **leader** determines whether the requested IP address belongs to a remote client 150 of the server farm or it is one of the joint IP addresses. If not, the leader ignores the request. If yes, the leader checks whether this IP address has already been assigned to one of the servers....” (Paragraph [0041], emphasis added.)

In contrast to Siev et al, the invented technique does not require any such “leader” (Master). Instead, the load balancing algorithm is performed by applying an algorithm at each router. The performance of the load balancing by the routers themselves (as peers), rather than a “leader”, is a fundamental difference which clearly distinguishes the claimed invention over Siev et al. This fundamental difference is also not taught by either Siev et al or Inoue et al.

Inoue et al merely discloses ARP requests and replies, but it does not disclose or suggest the above-discussed fundamental difference where the load

balancing is performed by applying the algorithm at each router, rather than being performed by a “leader”. The claimed invention teaches an inventive use of ARP requests and replies to implement the load balancing by the routers themselves as peers.

Therefore, applicant respectfully submits that amended claim 17 is patentably distinguished over Siev et al in view of Inoue et al.

Claims 18-19 depend from claim 17. Hence, applicant respectfully submits that these claims are now also patentably distinguished over the cited art.

Claim 23 is amended similarly to claim 17. Hence, applicant respectfully submits that claim 23 is now also patentably distinguished over the cited art for the same reasons as discussed above in relation to claim 17.

Claims 21-22 were rejected under 35 U.S.C. 103 as being unpatentable over Siev et al in view of Inoue et al in further view of Datta et al. Applicant respectfully traverses this rejection.

Datta et al is cited in relation to a round robin type selection process and communicating load levels. Datta et al does not disclose or suggest the above-discussed deficiencies of Siev et al and Inoue et al.

Claims 21-22 depends from claim 17. Hence, applicant respectfully submits that claims 21-22 are now also patentable over the cited art for at least the same reasons discussed above in relation to claim 17.

Claim 20 was rejected under 35 U.S.C. 103 as being unpatentable over Siev et al in view of Inoue et al, as applied to claim 19 above, in further view of Blair et al. Applicants respectfully traverse this rejection in relation to the claims as hereby amended.

Blair et al does not disclose or suggest the above-discussed fundamental difference where the load balancing by each router, rather than a “leader”.

Claim 20 depends from claim 19. Hence, applicant respectfully submits that claim 20 is now also patentable over the cited art for at least the same reasons discussed above in relation to claim 19.

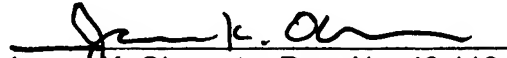
Conclusion


For the above-discussed reasons, applicant believes that the pending claims, as amended, now overcome the objections and rejections of the latest office action. Favorable action is respectfully requested.

If for any reason an insufficient fee has been paid, the Commissioner is hereby authorized to charge the insufficiency to Deposit Account No. 08-2025.

Respectfully Submitted,

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